



City Manager's discussion about sustainability and energy: Taking Mankato's street lights to the next level

Mankato's street lighting

Mankato's street lighting system includes more than 1,800 privately owned lights and about 1,600 of city-owned lights. Mankato is responsible for continuous lighting on main roadways (arterial and collectors) and utilities companies (Xcel Energy and Benco Electric) focus on residential street lighting. When lights are installed, initial costs are paid for by the developer. Once installed, maintenance for existing lights is done by either utility company or the city. Since street lighting is a significant expense within the city's budget of more than \$535,000 for electricity, supplies and maintenance costs per year, staff continues to look for ways to reduce these costs. This makes it important for staff to work closely with utility companies to ensure any lights installed align with Mankato's street lighting policy.

Evaluating current street lighting

As street lighting ages and needs updating, Mankato staff evaluates systems to determine how to provide a better level of lighting service to customers. Another goal is to see what cost savings can be achieved from upgrading the city's lighting system from high pressure sodium lights to Light Emitting Diodes (LEDs). LEDs last significantly longer than other types of lights (up to 100,000 hours [27 years]), and high pressure sodium lights lighting span is between 12,000 to 25,000 hours (about six and a half years). Since LEDs provide best return on investment, plans are to use this type of lighting throughout the city. So far, LED lighting has been installed on Madison and Monks avenues, Premier Drive and Front Street.

A good example is LED lighting on Front Street. An average annual energy savings of 37,800 kilowatts is achieved, as well as maintenance and energy cost savings of \$5,400. Since LED lights can last up to 27 years, there's a potential cost savings of \$145,000. What's more, these lights feature a new technology – Remote Operating Asset Management system (ROAM) that allows staff to control lighting schedules. When Front Street is at its busiest, light brightness can be set to its fullest to enhance public safety. Staff can also use ROAM to dim lights on Front Street when maximum lighting is not needed.

LED lighting is also on Madison Avenue (from Seventh Street to Sioux Avenue), where the ROAM system is also used. An average annual energy savings of 128,800 kilowatts is achieved, as well as maintenance and energy cost savings of \$18,400—a potential cost savings of \$500,000 over 27 years.

Another technology tool in place is a passive management system that notifies when a light fixture goes out. Technology identifies when and where a light goes out. Staff can provide better response time in addressing lighting issues.

Planning for the future

As streets lights are replaced or need to be installed, staff plans to continue the shift from traditional high pressure sodium lights to LED lighting. These lights will be replaced when there's new construction underway, or when existing street lights need to be updated. Areas slated for LED lighting include

Hickory Street, Monks Avenue (going north) Washington park and on Hoffman Road near Prairie Winds Middle School.

A study, scheduled to begin soon, will help determine what kind of energy and cost savings can be achieved if all city street lights were LEDs. If a significant savings can be achieved in five to six years for example, staff may consider conversion. The study is expected to be complete by August.

For more information about Mankato's street lighting, contact City Manager Patrick Hentges at 507-387-8695 or phentges@mankatomn.gov.